Public Workshop
on
The 2006 Water Desalination Proposal Solicitation Package

Office of Water Use Efficiency and Transfers
Department of Water Resources

February 10, 2006
Sacramento, CA

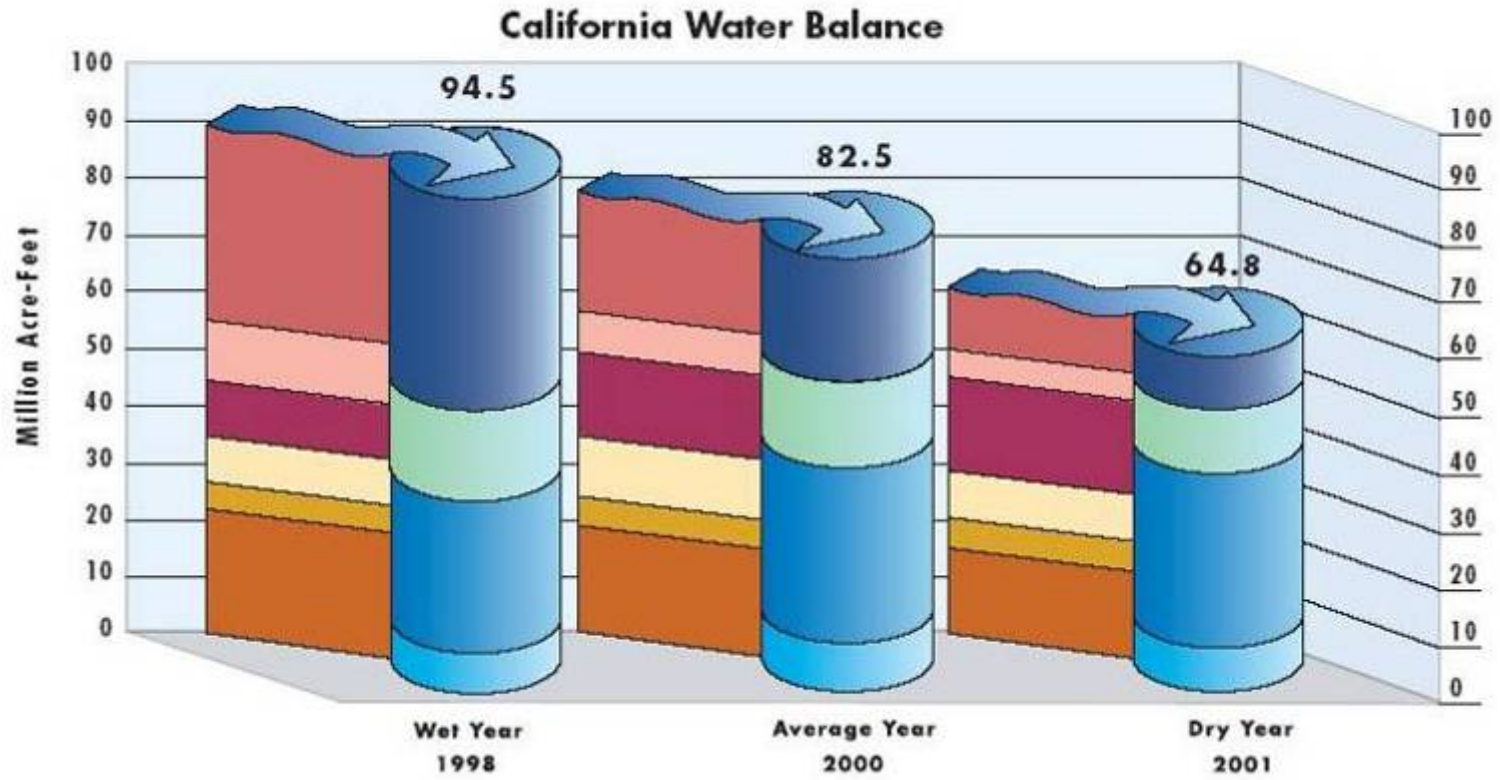
Why Desalination in California?

- Much of the population lives in coastal regions
- Water supply reliability through droughts
- Cost and environmental impact of new dams, conveyances
- Reduction of some current sources
- Increasing urban demand
- Need for high water quality
- We like to stay ahead of the curve….

Benefits of Desalination

- Can help meet water demand by introducing a new water supply component
- Diversify the State's water portfolio
- Drought-proof
- Ocean Water Desalination - Renewable
- Brackish Water Desalination – Use of previously unusable water supplies

Figure 3-5 California water balance for 1998, 2000, and 2001

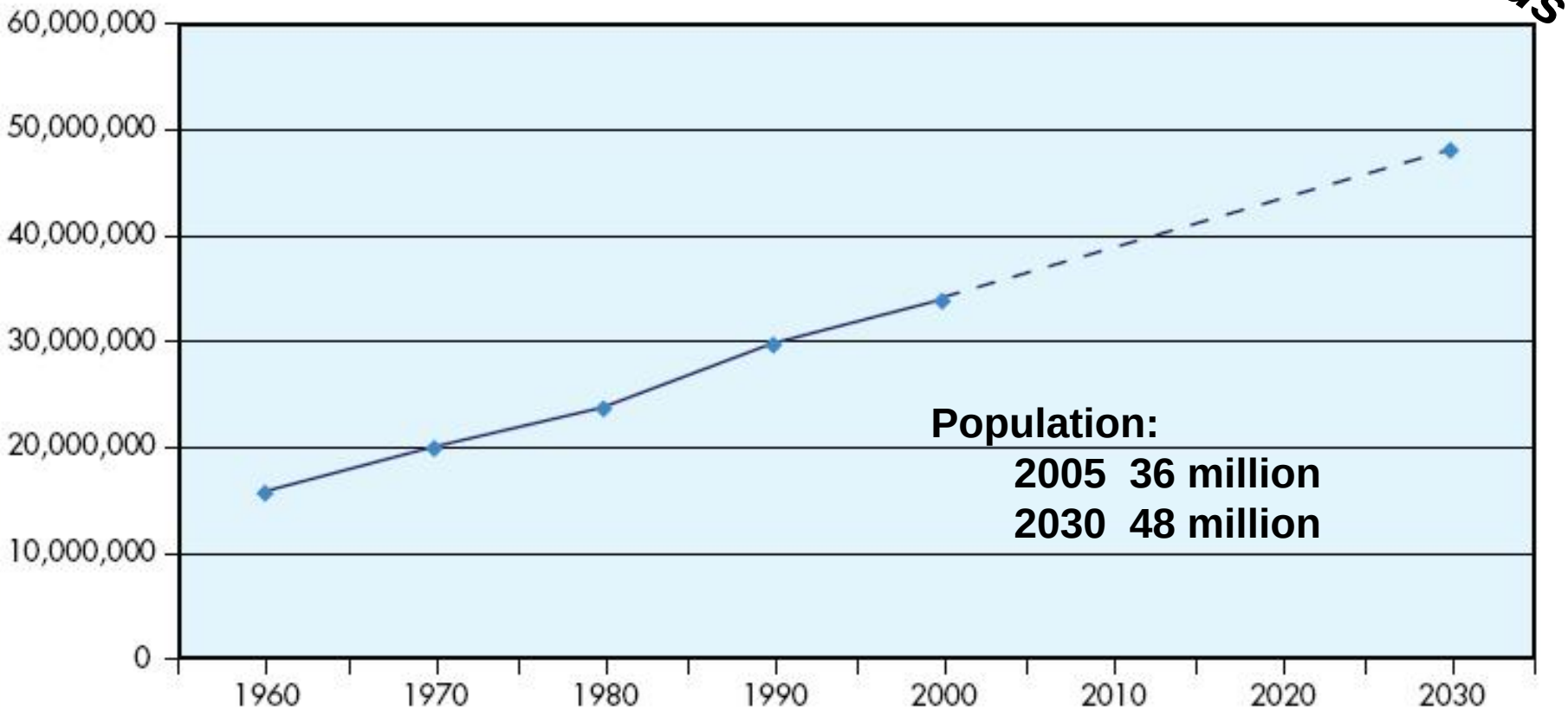


California's water balance can vary significantly from year to year. Three recent years show a marked change in the amount and relative proportion of the following: water delivered to urban and agricultural sectors and water dedicated to the environment (applied water use); where the water came from (water source); and how much water was reused among sectors. Each year, applied water is only a portion of California's total precipitation and inflows. The rest—about 120 maf in an average year—either evaporates, is used by native vegetation, provides rainfall for agriculture and managed wetlands, or flows out of state or to salt sinks. (See Volume 3 for state and regional waterflow charts.)

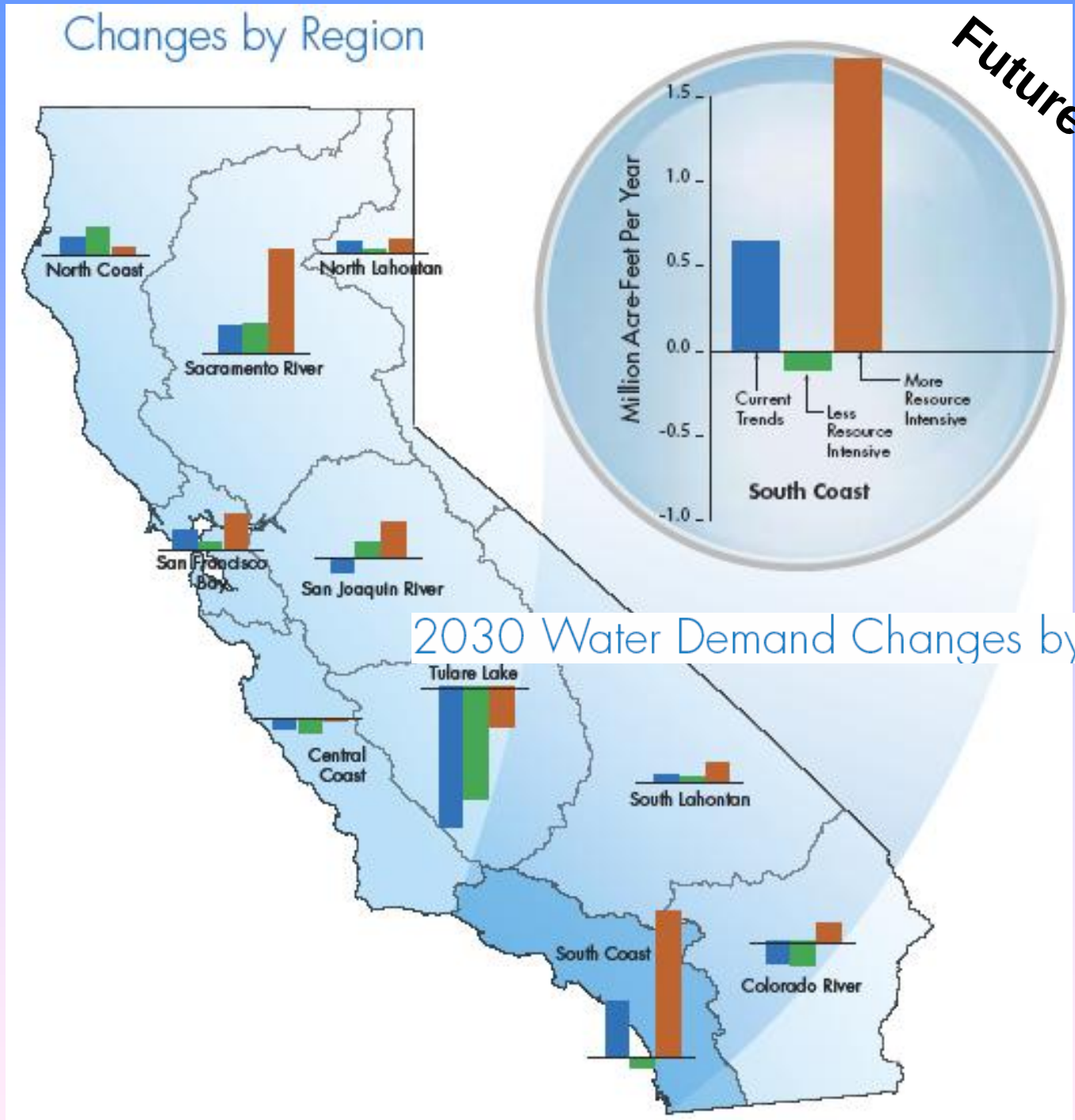
Supply varies by year

Future Needs

Figure 1-8 State of California population

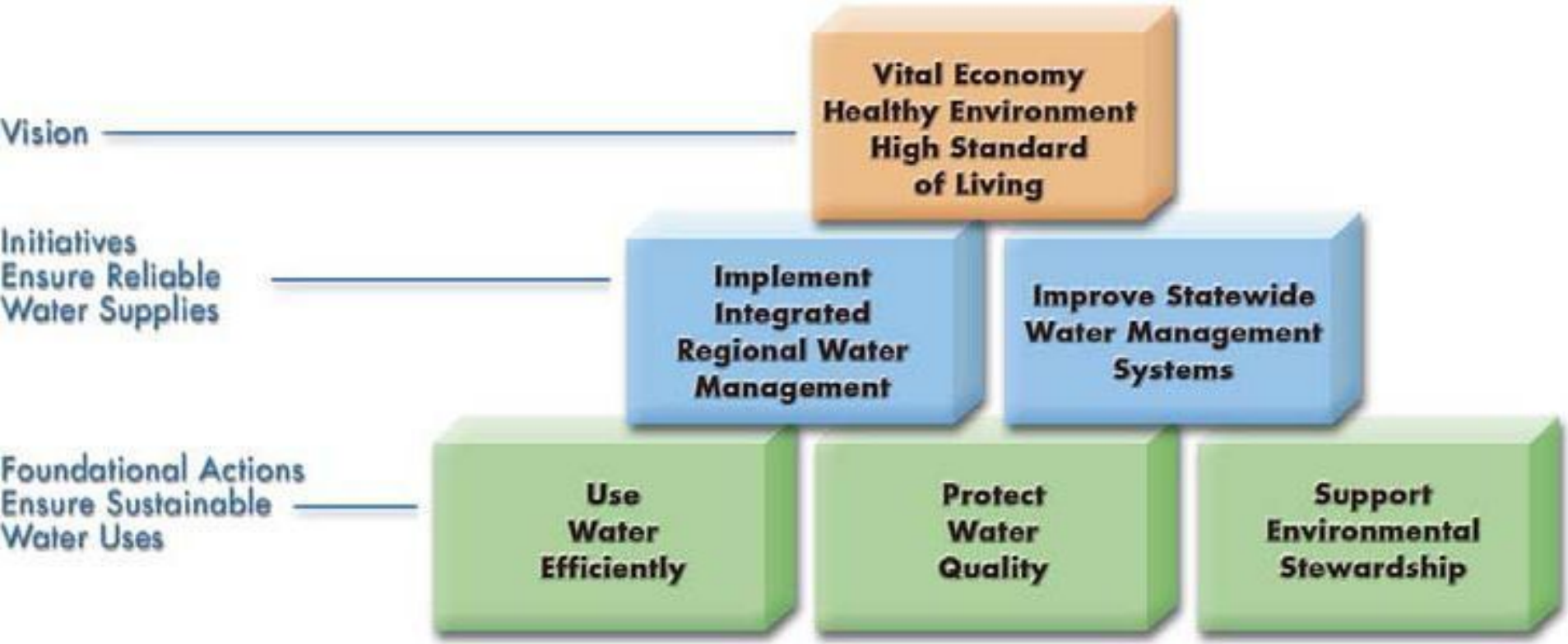


The nation's most populous state is now growing by about 600,000 people per year. The California Department of Finance projects that the state's population may exceed 48 million by 2030 and 55 million by 2050.


Changes by Region
Future changes
Million Acre-Feet Per Year
1.5
1.0
0.5
0.0
-0.5
-1.0
Current Trends
Less Resource Intensive
More Resource Intensive
South Coast
North Coast
North Lahontan
Sacramento River
San Francisco Bay
San Joaquin River
Tulare Lake
Central Coast
South Lahontan
South Coast
Colorado River
2030 Water Demand Changes by Scenario

Framework for Action

Sustainable & Reliable Water in 2030



Source: California Water Plan Update, 2005

Implement Integrated Regional Water Management

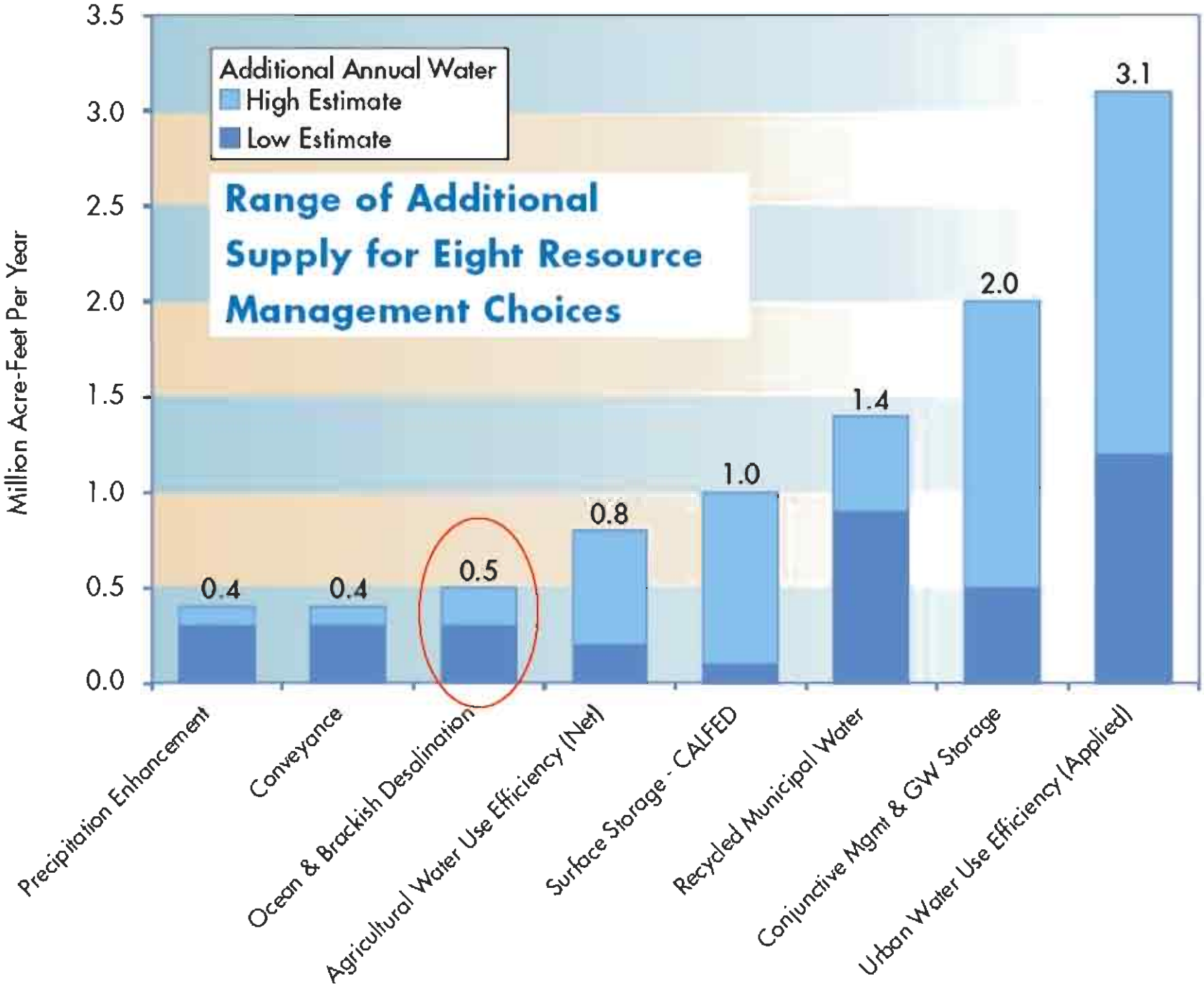
- Foster regional partnerships
- Develop integrated regional water management plans
- Diversify regional water portfolios

Improve Statewide Water Management Systems

- Maintain aging facilities
- Implement CALFED Program
- Improve flood management
- Sustain the Sacramento-San Joaquin Delta

California Water Plan Update
Resource Management Strategies

1. Ag. Lands Stewardship
2. Agricultural Use Efficiency
3. Conj. Mgmt / GW Storage
4. Conveyance
5. **Desalination**
6. Drinking Water Treatment & Distribution
7. Economic Incentives (Loans, Grants & Water Pricing)
8. Ecosystem Restoration
9. Floodplain Management
10. GW / Aquifer Remediation
11. Matching WQ to Use
12. Pollution Prevention
13. Precipitation Enhancement
14. Recharge Area Protection
15. Recycled Municipal Water
16. Surface Storage – CALFED
17. Surface Storage – Region/Local
18. System Reoperation
19. Urban Land Use Management
20. Urban Runoff Management
21. Urban Water Use Efficiency
22. Water-Dependent Recreation
23. Water Transfers
24. Watershed Management
25. Other Strategies (R&D)


Range of Additional Supply for Eight Resource Management Choices
Additional Annual Water
High Estimate
Low Estimate
Million Acre-Feet Per Year
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.4
0.4
0.5
0.8
1.0
1.4
2.0
3.1
Precipitation Enhancement
Conveyance
Ocean & Brackish Desalination
Agricultural Water Use Efficiency (Net)
Surface Storage - CALFED
Recycled Municipal Water
Conjunctive Mgmt & GW Storage
Urban Water Use Efficiency (Applied)

Desalination Task Force:
Background & Objectives

- **AB 2717, Hertzberg – Signed 09/26/2002**
- **Task Force Formed by DWR**
  - **Convened 05/29/2003**
  - **Report to Legislature 10/09/2003**
- **Objectives:**
  - **Identify potential opportunities and impediments for using desalination**
  - **Examine what role, if any, the State should play in furthering the use of desalination**

Task Force Recommendations:

The Task Force put forth a set of 29 recommendations covering a broad range of issues including:

- ✓energy
- ✓environment,
- ✓planning,
- ✓permitting,
- ✓funding, and
- ✓equity.

Among the Task Force's 29 Major Recommendations:

- ✓ Include desalination, where economically and environmentally appropriate, as an element of a balanced water supply portfolio, which also includes conservation and water recycling to the maximum extent practicable
- ✓ Provide funding for research and development projects
- ✓ Evaluate all new water supply strategies including desalination based integrated planning, growth and water supply/demand projection
- ✓ Ensure desalination projects are designed and operated to avoid, reduce or minimize environmental impacts
- ✓ Ensure adequate public involvement

Desalination and DWR (1)

- **The Framework: California Water Plan Update,**
  - **Develop a strategic plan for adequate, reliable, secure, affordable and sustainable water of suitable quality for all beneficial uses.**
  - **Ensure that any resulting water supply be part of a balanced and comprehensive water portfolio that includes conservation and recycling.**

Desalination and DWR (2)

- **No preference for or bias against specific technology**
- **No preference for feedwater sources, an equal weight to both Brackish and Ocean desal**
- **Prerequisite for support: the implementation of all conservation and recycling programs.**
- **Safeguards: Public and Environment Health Protection.**
- **Instruments: Technical and Financial Assistance.**

Program:

Proposition 50 Chapter 6(a)

“Desalination of Ocean or Brackish waters”

Program Objective

Assist local public agencies with the development of new local potable water supplies through the construction of brackish water and oceanwater desalination projects and help advance water desalination technology and its use by means of feasibility studies, research and development, and pilot and demonstration projects.

Proposal Solicitation Guidelines

- Proposition 50 Language
- AB 1747 Trailer Bill (statute of 2003)
- Water Desalination Task Force's Findings & Recommendations
- Other Relevant Laws
- **Public Input**

Eligible Applicants

Public entities involved with water management activities including:

Cities	**Counties**	**Joint power authorities**
Public water districts	**Non-profit organizations**	**Watershed management groups**
Tribes	**Universities and colleges**	**State and federal agencies and other political subdivisions of the State**

Project Eligibility

- **Eligible: brackish and oceanwater desalination construction projects for the development of local Potable Water supplies, research and development, feasibility studies, pilot, and demonstration projects.**
- **Not eligible: Wastewater treatment, and the treatment of impaired waters and agricultural drainage water unless for the creation of New or Alternative Potable Water Supplies.**

Definitions

New potable water is water that without desalination treatment cannot be used for potable purposes.

Alternative potable water is water created by a desalination project to realize identified environmental benefits by replacing the same amount of freshwater withdrawn from a natural water body.

Important Desalination Issues

- Better feedwater pretreatment processes and strategies
- Value and limitations of beach wells for feedwater intake
- Technologies to reduce entrainment and impingement
- Strategies for brine/concentrate management
- Opportunities for energy efficiencies and application of alternative energy sources and combined energy and desalination technologies
- Improved membranes with high salt rejection and less susceptible to scaling and fouling
- Improved desalination process design, to include but not limited to: membrane processes and thermal processes
- Other applied research investigations aiming at refining/advancing desalination technology

Funding Criteria / Preferences

- ***Comprehensive conservation and recycling programs***
- ***New and improved technology***
- ***Public information, education, and outreach***
- ***Multiple-benefits***
- ***Ensure equitable access to benefits- address environmental justice impacts***

2006 Funding Cycle

~$21.5 million

(50 % matching funds required)

Eligible Project Types and Funding Caps

Feasibility studies	$250,000 / project
Research & development	$500,000 / project
Pilot or demonstration projects	$1.5 million / project
Construction projects	$3.0 million / project

Conflict of Interest, Confidentiality, Intellectual & Proprietary Rights

- *All participants are subject to State conflict of interest laws.*
- *All proposals become public information upon submittal to DWR.*
- *Applicant waives any rights to privacy and the confidentiality of the proposal.*

Review and Selection Process

Applications Received
(Deadline: 03/24/06)

Eligibility Review
(DWR Staff and Legal)

Technical Review

Score and Rank Proposals
(Draft Funding Recommendations)

Conduct Public Workshop
(Comments on Draft Funding Recommendations)

Final Funding Decision by DWR Director
(Posted to DWR Website)

Contract Negotiations Begin

Anticipated Schedule

10/04/05	Draft PSP released on website for public comment
11/07/05	2 Public Workshops: Sacramento 10/25/05 San Diego 11/07/05
11/14/05	Public Comment Period ends
01/26/06	Final PSP released on website to accept proposals
02/10/06	Public Workshop for Final PSP
03/24/06	Proposals Due
05/31/06	Review process completed
06/06	DWR makes final funding decision

Review Criteria

I	Relevance and Importance	**20**
II	Technical/Scientific Merit, Innovation and Technological Advancement	**20**
III	Project Readiness, Feasibility, and Environmental Mitigations and Benefits	**15**
IV	Project Tasks, Deliverables, Monitoring and Assessment	**15**
V	Outreach, Information Sharing, and Environmental Justice	**10**
VI	Qualifications of the Applicants & Cooperators	**10**
VII	Costs and Benefits	**10**

No projects with a total score of less than 70 points shall be funded

Statement of Work 1

Relevance and Importance

(20 Pts)

- Goals and objectives
- Need for project as related to critical local, regional, Bay-Delta, State and federal water issues
  - Demonstrated need for **new or alternative** water supplies
- Show all conservation and recycling programs have been implemented before considering desalination

Statement of Work 2
Technical/Scientific Merit, Innovation & Technological Advancement
(20 Pts)

- Describe methods, procedures, equipment, facilities
- Describe innovative technologies or methodologies
- Contribution to cost-effective, technologically sound implementable methods

Statement of Work 3

Project Readiness, Feasibility, & Environmental Mitigations & Benefits

(15 Pts)

- Describe Project Readiness
- Complete project plan
- Final plans and specifications or preliminary if final not available

  (for construction projects only)
- Plan for compliance with all applicable environmental requirements.

Statement of Work 4

Project Tasks, Deliverables, Monitoring and Assessment

(15 Pts)

- Project plan and work schedule
  - Identify Tasks / Projected Costs
  - Expected Deliverables / Milestones
  - Timeline (Start & End Dates)
- Procedure to evaluate success in achieving project goals

Outreach, Information sharing, and Environmental Justice

(10 Pts)

- Describe plan for public outreach
- Identify local groups, organizations – level of support/opposition
- Describe how information and project results will be disseminated

Qualifications of Applicants and Cooperators

(10 Pts)

- Résumé of project manager (s)
- Describe role of any external cooperators

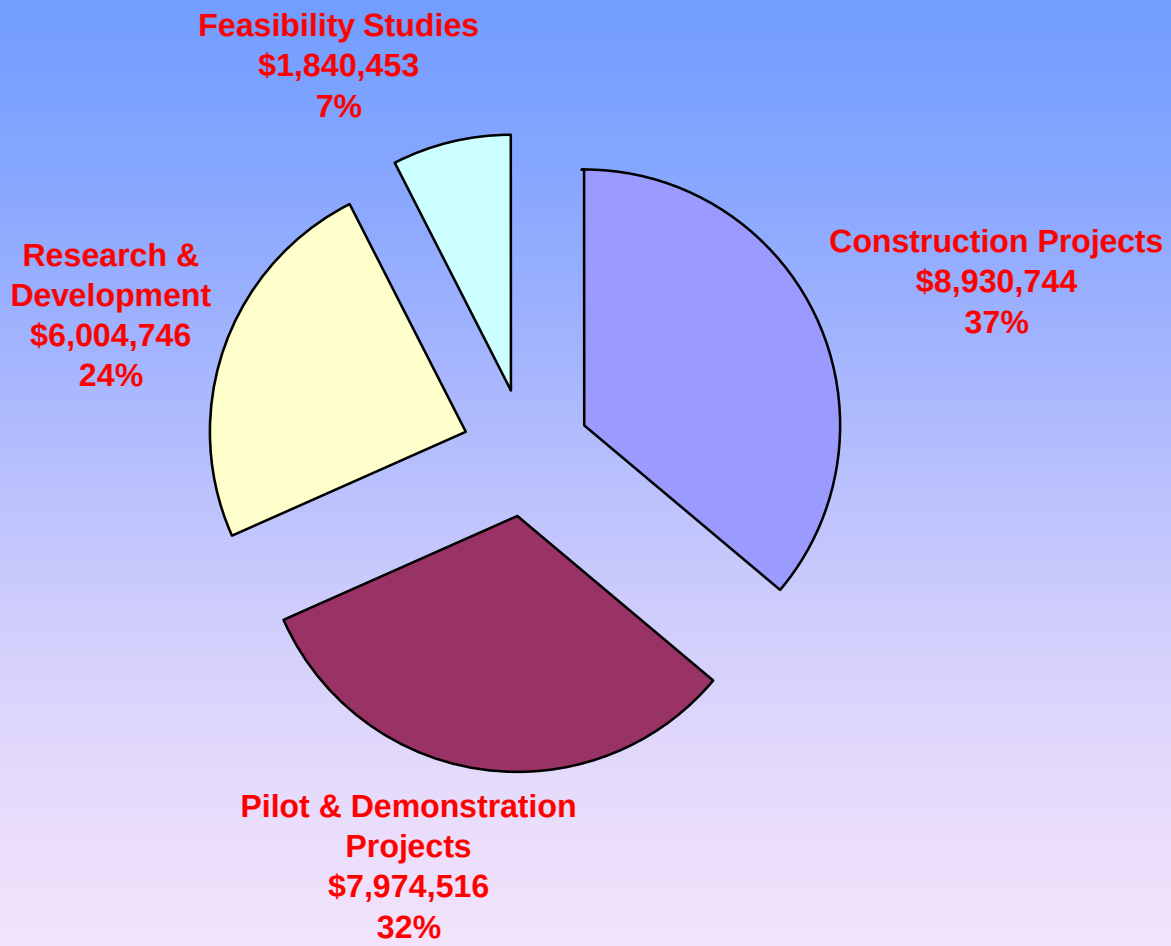
Costs and Benefits

(10 Pts)

- Complete Project Costs (Budget)
- Describe potential benefits and information to be gained advancing water desalination
- Compare potential benefits and information gained to anticipated costs

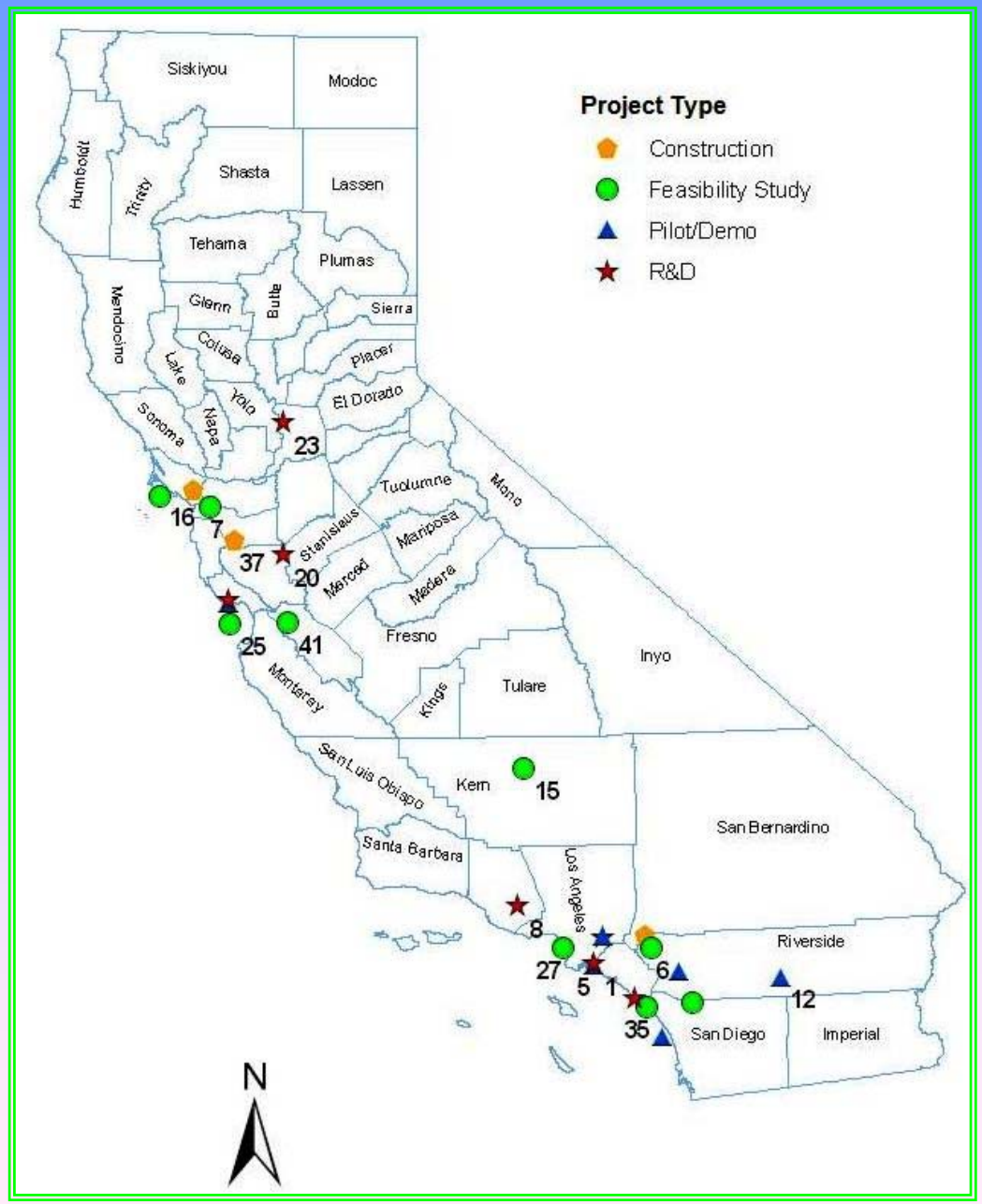
2005 Funding Cycle Awarded Grants

Project Category	(Number of Funded Projects / Total Projects)	Project Total Cost ($)	Requested ($)	Grant Amount (m$)
Construction Projects	(3/8)	104,359,043	15,000,000	8,930,744
Pilot and Demonstration Projects	(6/14)	26,438,272	10,474,232	7,974,516
Research and Development	(7/11)	13,804,295	6,004,746	6,004,746
Feasibility Studies	(8/9)	4,437,061	2,089,994	1,840,453
Total	**(24/42)**	**149,038,671**	**33,568,972**	**24,750,459**



Proposition 50 Desalination Grants – 2005 Funding Cycle:
Fund Distribution by Project Category

2005 Funding Cycle
Awarded Projects' Geographic Distribution



Helpful Links

Department of Water Resources

www.water.ca.gov

Recycling and Desalination Branch

www.owue.water.ca.gov/recycle/

Questions ?
Need Assistance ?

Contact:

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